

Closing remarks for NuTau2021

Julia Gehrlein

Brookhaven National Laboratory



Brookhaven[™]
National Laboratory



Co-chair of NuTau 2021

- ▶ More tau neutrino experiments are coming online
 - push towards a common goal of **high precision measurements of the PMNS matrix elements**. What will be the ultimate precision on the matrix elements we can achieve, what are the (experimental) requirements to achieve this goal?

- ▶ Use of **multiple experiments and combination** to approach the challenge of tau neutrinos: BSM scenarios, unitarity, NSI, . . . , alleviate common systematic uncertainties? Driven by theorists or experimentalists?

- ▶ **Connections** of tau neutrinos at the LHC with VHE atmospheric measurements in water/ice detectors needs further exploring: How will we address the low x region needed as input for the atmospheric oscillation experiments?

→ Bring these communities together to develop the measurement programs needed

- ▶ **Lepton universality** is another big physics theme that we can explore in the neutral lepton sector of which ν_τ is the least understood.
 - What do we need to improve the experimental data and theoretical calculations needed to do these tests?

- ▶ Understand **backgrounds and reconstruction efficiency** for tau tagging at very-high energy and ultra-high energies
 - What are the requirements to achieve this?

- ▶ Sections:
 1. History and motivation (Denton)
 2. Experimental probes (Bishai, de Roeck, Wissel)
 3. Tools (Aurisano)
 4. Theoretical interests (de Gouvea, Mocioiu)
 5. Conclusions
- ▶ Editors will organize their section and contact individuals for writing assignments
- ▶ if you want to contribute something contact the editor of the section to get further instructions
- ▶ see Peter's talk from Tuesday for more information on the white paper

► timeline

1. Contributions submitted to editors: December 10
2. Draft circulated: January 5
3. Comments/additions/corrections due: January 19
4. Draft circulated: January 26
5. Final comments due: January 31
6. Post to arXiv: February 2

7. Contributed whitepaper deadline: March 15

▶ timeline

1. Contributions submitted to editors: December 10
2. Draft circulated: January 5
3. Comments/additions/corrections due: January 19
4. Draft circulated: January 26
5. Final comments due: January 31
6. Post to arXiv: February 2

7. Contributed whitepaper deadline: March 15

- ▶ Plan to organize semi-regular meetings, every two weeks at 9 am ET or alternate between two times (one good for Asia and one good for Europe)?

Thank you!

Thanks to all the speakers, chair persons, note takers, attendees,
organization committee!

